

Utility of Homoeopathic Medicines in Bronchitis

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DEFINITION

"Bronchitis is a clinical disorder characterized by productive cough due to excessive mucus secretion in the bronchial tree not caused by Broncho-Pulmonary disease, on most of the days for at least 3 months of the year for at least 2 consecutive years."

EPIDEMIOLOGY

Bronchitis is a common, preventable and treatable disease, with a worldwide prevalence of 10.1% in people aged 40 years or older. In 2019, bronchitis was the third leading cause of deaths globally, contributing to 3.23 million deaths, with most deaths 80% occurring in low and middle income countries. It occurs in 18% of male and 14% of female smokers and in 7% and 6% of those who have never smoked. About 5% of adults have an episode of acute bronchitis each year. An estimated 90% of these seek medical advice for the same.

RISK FACTOR

Smoking

Prolong cigarette smoking appears to act on the lungs in a number of ways like it impairs ciliary movement, it inhibits the function of alveolar macrophage, it leads to hypertrophy and hyperplasia of mucus secreting glands, it causes considerable obstruction of small airways, it stimulates the vagus and causes bronchoconstriction, airway responsiveness and bronchitis.

A tendency for increased bronchoconstriction in response to a variety of exogenous stimuli, including methacholine and histamine, is one of the defining features of allergic bronchitis. However, many patients with acute bronchitis also share this feature of airway hyper-responsiveness.

➤ Age and gender

Middle age group people. Male is more susceptible than female.

➤ Respiratory infections

Respiratory infections are important causes of exacerbations of bronchitis, the association of both adult and childhood respiratory infections with development and progression of chronic bronchitis remains to be proven.

➤ Occupational exposures

Increased respiratory symptoms and airflow obstruction have been suggested to result from exposure to dust and fumes at work.

Several specific occupational exposures, including coal mining, gold mining, and cotton textile dust, have been suggested as risk factors for chronic airflow obstruction. Although non-smokers in these occupations can develop some reduction in the FEV₁, the importance of dust exposure as a risk factor for bronchitis, independent of cigarette smoking, is not certain for most of these exposures.

➤ Ambient air pollution

There is increased respiratory symptoms in those living in urban compared to rural areas, which may relate to increased pollution in the urban settings. Prolonged exposure to smoke produced by biomass combustion-a common mode of cooking in some countries-also appear to be a significant risk factor for chronic bronchitis among women in those countries.

➤ Passive or second hand, smoking exposure

Exposure of children to maternal smoking results in significantly reduced lung growth. In utero, tobacco smoke exposure also contributes to significant reduction in postnatal pulmonary function.

➤ Genetic consideration

Severe α_1 AT (anti-trypsin) deficiency is a proven genetic risk factor for chronic bronchitis; there is increase evidence that other determinants also exist. There appears to be a poorly- defined familial tendency and genetic predisposition to develop disabling chronic bronchitis. However, it is more likely that non-smoker family member who remain in the air pollution of home are significantly exposed to smoke and have increased level of CO.

Pathology

Cigarette smoke exposure may affect the large airways, small airways and alveoli. Changes in large airways causes cough and sputum, while changes in small airways and alveoli are responsible for physiological changes.

Cigarette smoking often result in mucus gland enlargement and goblet cell hyperplasia, leading to cough and mucus production that define chronic bronchitis, but these abnormalities are not related to airflow limitation. Goblet cells not only increase in number but in extent through the bronchial tree. Bronchi also undergo squamous metaplasia,

predisposing to carcinogenesis and disrupting mucociliary clearance.

Patient may have smooth-muscle hypertrophy and bronchial hyperreactivity leading to airflow limitation.

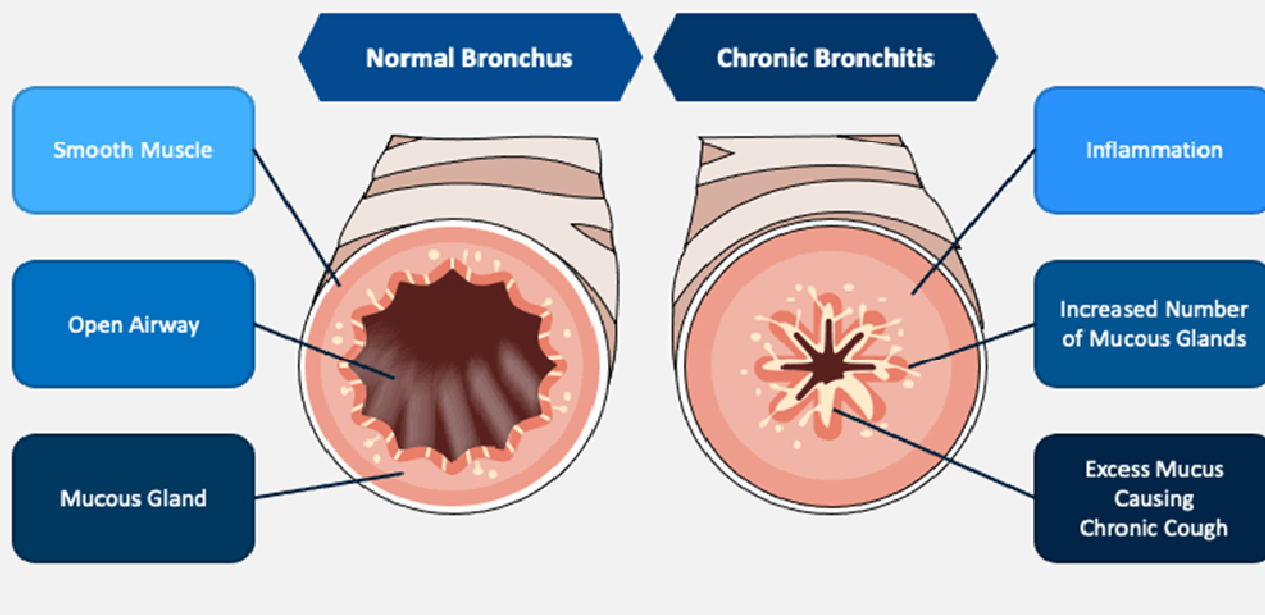
Neutrophil influx has been associated with purulent sputum of upper respiratory tract infection. Grossly the bronchial wall thickened, hyperaemic, and oedematous. Lumina of bronchi and bronchioles may contain mucus plugs and purulent exudate.

Microscopically, just as there is clinical definition, there is histologic definition of chronic bronchitis by increased Reid index. Reid index is the ratio between thickness of submucosal mucus glands i.e. hypertrophy and hyperplasia) in the cartilage-containing large airways to that of the total bronchial wall. The increase in thickness can be quantitatively assessed micrometre lens. The bronchial epithelium may show squamous metaplasia and dysplasia.

There is little chronic inflammatory cell infiltrate, The non-cartilage containing small airways shows goblet cell hyperplasia and intraluminal and peri-bronchial fibrosis.

CHRONIC BRONCHITIS

Pathophysiology of Chronic Bronchitis



TYPES OF BRONCHITIS

There are two types of bronchitis which includes following

- Acute bronchitis
- Chronic bronchitis

ACUTE BRONCHITIS

"The term acute bronchitis defines self-limited (1 to 3 week) inflammation of large airway of the lung extended to tertiary bronchi. In patient with a primary symptom of cough, the diagnosis is made if there is no clinical and radiological evidence of pneumonia."

CHRONIC BRONCHITIS

"A clinical condition characterized by cough and sputum on the most day for at least 3 months, in each of consecutive 2 years."

Cause

- Infection: - result of acute bronchitis, tonsillitis, URTI. Bacterial infection viz., mycoplasma pneumonia, Bordetella pertussis, streptococcus pneumonia and haemophilus influenza. Typical viruses include rhinovirus, influenza.
- Cigarette smoking
- Air pollution
- Passive smoking
- General illness viz., obesity, alcoholism, HIV positive patient

Symptoms

1. **History:** - The three most common symptoms in chronic bronchitis are cough, sputum production, and exertional dyspnoea. Although the development of airflow obstruction is gradual process, many patients date onset of their disease to an acute illness or exacerbation. The development of exertional dyspnoea, or gasping, can be insidious.
2. **Cough:** - Constant paroxysmal, worse in winter or on exposure to cold winds or sudden change of temperature.
3. **Shortness of breath:** - Typically, shortness of breath is worse on exertion of a prolonged duration and worsen over a time. In the advance stages, or end stage pulmonary disease, it occurs during rest and may be always present.
4. **Obstructive:** - choked up feeling, paroxysms of dyspnoea particularly following spells of coughing relieved with expectoration.
5. **Chest tightness**
6. **Chest pain**
7. **Expectoration:** - Variable, may be little, thin and mucoid or thick or frothy, mucoid and sticky. May become muco-purulent during attacks of acute bronchitis in winter.
8. **Haemoptysis:** - In advance cases where gross pathological changes occurred the fresh bouts of blood come along with coughing.
9. **Generalised symptoms** viz., fever, malaise, palpitation, weakness, giddiness, nausea etc...

Signs

1. Occasional rales and rhonchi
2. Wheezing sound on expiration

3. Crackles at lung base
4. Restlessness
5. Clubbing in extreme stages
6. Cyanosis in extreme stages
7. Unilateral diminished movement of chest.

➤ Investigation

Clinical examination

RS findings:- bronchospasm along with occasional wheezing sound on auscultation of affected lung

- Thoraco-abdominal breathing type.
- In severe cases Bronchial breathing is found
- Dyspnoea: - It will be measured by modified MRC dyspnoea scale.
- Saturation of oxygen: - It is measure by pulse-oximeter, and in severe cases it found below 90% which is generally found 97 to 98% who has healthy lungs
- Tachycardia with Tachypnoea found

• Spirometry test

Laboratory investigation

- CBC: - Leucocytosis with Neutrophilia and Lymphocytosis
- CRP: - It will high if case is of acute exacerbation chronic bronchitis
- ESR: - High
- AEC: - To rule out allergic bronchitis and other parasitic infection which may affect lung
- S. IgE: - Moderately high

Diagnostic investigation

- PFT: - Reduction in FEV1 and FEV1/FVC is hallmark diagnostic criteria for acute bronchitis.
- Sputum examination: - Neutrophilic granulocytes

• Radiological investigation

- X-ray chest: - Hyper inflated lungs, flattened diaphragm and increase retrosternal clear space.

Complication: -

- Consolidation
- Pneumothorax
- Hydro-pneumothorax
- Pleural effusion
- Fibrosis of lung

MANAGEMENT:

1. **TO REMOVE THE CAUSE IF POSSIBLE –** Air pollution, smoking. Elimination of aerosol sprays such as deodorants, insecticides and hair sprays.

Other preventive measures include early vaccination against common influenza virus strains. Pneumococcal polysaccharide vaccine should be given only once because of danger of immunologic reactions following repeated vaccination.

2. TO PREVENT ACUTE EXACERBATIONS –

By avoiding overheated rooms, damp and foggy places, stuffy clothing, overfeeding, smoking and too much alcohol. Long term treatment with tetracycline group of drugs often produces striking improvement in patients who have a purulent sputum.

3. TO TRY AND ARREST THE PROGRESS OF THE CHRONIC DISEASE BY:

- A. *Increasing patient's power of resistance* – By giving to debilitated persons abundant butter, milk or cream, cheese and other fatty articles of diet. Weight reducing measures if obesity.
- B. *Physical methods* – Regular exercises in fresh air and within limits of tolerance. Encouraging deep breathing and efficient clearance, coughing should follow a full inspiration. If economic condition permits, winter should be spent at warm resorts.

4. TO GIVE THE PATIENT AS MUCH COMFORT AS POSSIBLE –

- (a) *Antitussives* – such as linctus codeine if dry cough.
- (b) *Mucolytics* and inhalation of medicated steam.
- (c) *Expectorants* – (i) Ammonium salts, bromhexine or ambroxol in mixture form. (ii) Hot alkaline drink

HOMOEOPATHIC MANAGEMENT OF BRONCHITIS

Homoeopathy is having much efficacy in treating bronchitis because of its individualistic approach to treat the sick with dynamic and potentised medicines. In homoeopathy, along with the disease condition, the man in disease is treated considering mind and body known holistic treatment so we can successfully controlling the recurrence.

There are wide range of homeopathic medicines present for bronchitis. Some of them are listed below:

- **Bryonia:** Dry, hacking cough from irritation in upper trachea. Cough, dry at night; must sit up; worse after eating or drinking, with vomiting, with stitches in chest, and expectoration of rust coloured sputa. Coming into warm room excites cough. Heaviness beneath the sternum extending towards the right shoulder. Cough worse by going into warm room and better by pressure, rest, cold things.
- **Kali carb:** Dry, hard cough around 3 a.m., with stitching pains and dryness of the pharynx. Wakes up around 2 o'clock and cannot sleep again due to severe breathlessness. Cutting pain in the chest;

worse lying on the right side. Bronchitis entire chest is very sensitive. Expectoration scanty and tenacious, but increasing in the morning and after eating; aggravated in the right lower chest and by lying on painful side. Expectoration must be swallowed; cheesy taste; copious, offensive.

- **Phosphorus:** Cough from tickling in throat; worse, cold air, reading, laughing, talking, ongoing warm room into cold air. Sweetish taste while coughing. Hard, dry, tight, racking cough. Congestion of lungs. Tightness across chest; great weight in chest. Sharp stitches in chest; respiration quickened, oppressed.
- **Arsenic album:** Unable to lie down; fears of suffocation. Air passages constricted. Complaints worse at night. Burning feeling in chest. Suffocative catarrh. Cough worse after midnight, worse lying on back. Expectoration scanty, frothy. Darting pain through upper third of the right lung. Wheezing respiration. Cough dry, as if from sulphur fumes; after drinking. Pleurisy.
- **Psorinum:** Dyspnoea; worse. Sitting up; better, lying down and keeping arms spread wide apart. Dry, hard cough, with great weakness of chest. Sensation of ulceration under sternum. Pain in the chest; better, lying down. Cough returns every winter, from suppressed eruption.
- **Dulcamara:** Cough from damp, cold atmosphere or from getting wet; patient have to cough long time to expel phlegm, especially infant and old people, as the cough seems to come from abdomen and convulses the muscle of chest and abdomen, patient tries to relieve the pain in chest and hypochondria by holding them tightly; Winter cough, dry, teasing. Loose, rattling cough; worse wet weather.
- **Antimonium Tartaricum:** On coughing, it seems as if much would be expectorated but nothing comes up. There is coarse rattling of mucus. It is especially useful for children and old people. Suffocative shortness of breath, before cough or alternating with cough. Coarse, loose, rattling cough. Chest seems full yet less and less is raised. Cough followed by vomiting or sleep worse anger- cough followed by vomiting or sleep and worse from anger.
- **Silicea:** Silicea is indicated in chronic bronchitis where discharge become yellowish in character. Sputum persistently mucopurulent and profuse. Slow recovery after pneumonia. Expectoration bloody or purulent. Suppurative stage of expectoration. Stitches in the chest extending to

back. Violent cough as lying down, with thick, lumpy expectoration.

- **Ammoniacum gummi** (gum ammoniac): A remedy for the aged and feeble, especially in chronic bronchitis.
- **Asclepias tuberosa** (pleurisy-root): Bronchitis and pleurisy come within its range. Respiration painful, especially at base of left lung.
- **Balsamum peruvianum** (peruvian balsam from myroxylonpereirae): Bronchitis, and phthisis, with muco-purulent, thick, creamy expectoration.
- **Blatta orientalis** (indian cockroach): A remedy for asthma. Especially when associated with bronchitis. Cough with dyspnoea in bronchitis and phthisis.
- **Bromium** (bromine): Fibrinous bronchitis, great dyspnoea. Bronchial tubes feel filled with smoke.
- **Ceanothus americanus** (new jersey tea): Chronic bronchitis with profuse secretion.
- **Coccus cacti** (cochineal): Chronic bronchitis complicated with gravel; large quantities of albuminous, tenacious mucus, are expectorated.
- **Digitalis purpurea** (foxglove): Chronic bronchitis; passive congestion of the lungs, giving bloody sputum due to failing myocardium. Expectoration sweetish.
- **Eriodictyon californicum** (yerba santa): A remedy for asthmatic and bronchial affections. Chronic bronchitis, bronchial tuberculosis, with profuse, easily raised bronchial secretion, giving relief.
- **Eucalyptus globulus** (blue gum-tree): Bronchitis in the aged. Fetid form of bronchitis, bronchial dilatation and emphysema.
- **Ferrum phosphoricum** (phosphate of iron): Bronchitis of young children.
- **Gelsemium sempervirens** (yellow jasmine): Aphonia; acute bronchitis, respiration quickened, spasmodic affections of lungs and diaphragm.
- **Grindelia robusta** (rosin-wood): An efficacious remedy for wheezing and oppression in bronchitic patients. Asthmatic conditions, chronic bronchitis. Bronchorrhoea with tough mucus, difficult to detach.
- **Hippozaeninum** (gladerine-mallein - farcine): Bronchitis in the aged, where suffocation from excessive secretion is imminent.
- **Hydrastis canadensis** (golden seal): Bronchitis in old, exhausted persons, with thick, yellow, tenacious expectoration.
- **Inula helenium** (scabwort): Chronic bronchitis; cough, with much thick expectoration, with languor and weak digestion.
- **Kalium nitricum** (nitrate of potassium-salt-peter): Bronchitis, with sharp, short, dry, hacking cough.
- **Naphthalinum** (a chemical compound from coal-tar; tar camphor): Bronchitis when the spasmodic element is associated with tenacious expectoration and oppression.
- **Natrium arsenicosum** (arseniate of sodium): Bronchitis of children over seven years.
- **Pixliquida** (pine-tar): Chronic bronchitis. Bronchial irritation after influenza.
- **Senega** (snakewort): Asthenic bronchitis of old people with chronic interstitial nephritis or chronic emphysema. Pressure on chest as though lungs were forced back to spine.
- **Silphium lacinatedum** (rosin-weed): Chronic bronchitis. Cough with expectoration profuse, stringy, frothy, light-colored.
- **Solidago virgaurea** (golden-rod): Bronchitis, cough with much purulent expectoration, blood-streaked; oppressed breathing.
- **Squilla maritima** (sea-onion): Valuable in chronic bronchitis of old people with mucous rales, dyspnoea, and scanty urine.
- **Sulphuricum acidum** (sulphuric acid): Bronchitis in children with short, teasing cough.
- **Veratrum album** (white hellebore): Chronic bronchitis in the aged. Cough comes on from drinking, especially cold water; urine escapes when coughing.
- **Zincum metallicum** (zinc): Asthmatic bronchitis, with constriction, of chest. Dyspnoea better as soon as expectoration appears.

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